

POLYTETRAFLON®
SEMI-FINISHED PRODUCTS & FINISHED
PARTS MADE FROM FLUORO- AND
HIGH PERFORMANCE PLASTICS

PLASTICS
WITHOUT
LIMITATIONS
MADE IN GERMANY



POLYTETRA



POLYTETRAFLON® SEMI-FINISHED PRODUCTS & FINISHED PARTS MADE FROM FLUORO- AND HIGH PERFORMANCE PLASTICS

► Products and Industries

Plastics and fluoroplastics in particular have been our field of activity for 30 years now. We are considered as reliable partners in the industry because of our experience, creativity and the extensive consultation services provided by us.

We not only offer a complete range of products, but focus also on comprehensive consultation services in the technically challenging field of thermoplastics. We will offer you our support in finding solutions to your applications. Just let us know your demands, so that you can benefit from our long-term experience in this area.

Polytetra GmbH distributes, manufactures and finishes products made from Fluoro- and High Performance Plastics. These include semi-finished products such as pipes, rods and plates, finished parts based on drawing specifications such as bellows or Camlock seals or the fabrication of films according to the customer's need.

Our products are used all over the world, particularly in the areas of:

cryology, medical engineering, chemical and automotive industry, food industry, machinery and plant engineering, electrical industry and many more.

► Materials and Production

We have a well-stocked semi-finished product warehouse, also in the area of compounded fluoropolymers or special materials, such as PCTFE.

In addition, we are dealer for Rulon®, which is still the No. 1 slip ring material after more than 50 years. More than 20 different Rulon® types are available in the meantime due to ongoing further developments. We would be happy to provide you assistance for your specific applications.

In our own design office and well equipped production centre we are able to produce technically demanding finished parts according to drawings or samples. We can undertake large scale as well as single part production.



► **We offer the following machining processes:**

Special behaviour of materials can be achieved by adding so-called compounds to PTFE powder. The following compounds are available among others: PTFE with glass, carbon, graphite, carbon/graphite, bronze, mica, etc. Get advice from our technical sales department.

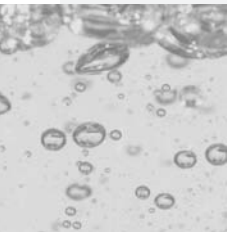
CNC machining on modern machining centres

- Milling
- Drilling
- Planing
- Grinding
- Turning (conventional and automatic)
- Sawing
- Stamping
- Water jet cutting
- Thermoforming,
- Welding, including PTFE

► **Additional details can be found on the Internet at:**

www.polytetra.com

**Do you have any queries?
For consultation:
+ 49 (0) 2166 / 95 90 - 0
Email: sales@polytetra.com**



POLYTETRAFLON®
RODS AND PIPES
MADE FROM VIRGIN PTFE



▶ **PTFE rods, extruded**
virgin
in lengths of 1,000 and 2,000 mm

Ø in mm	Approx. weight in kg/m
6	0.07
8	0.11
10	0.19
12	0.27
15	0.40
16	0.45
18	0.56
20	0.70
22	0.85
25	1.10
30	1.60
35	2.30
40	2.77
45	3.50
50	4.35
60	6.40

▶ **PTFE rods, pressed**
virgin
in lengths of 300 mm

Ø in mm	Approx. weight in kg/m
70	2.80
80	3.65
90	4.50
100	5.60
110	6.80
120	7.80
130	9.80
150	12.95
180	17.60
210	26.00

Properties overview

PTFE

- Very good antifriction properties
- High temperature resistance
- High chemical resistance
- Excellent non-stick properties
- Physiologically safe

▶ **PTFE pipes, extruded**
virgin
in lengths of 1,000 and 2,000 mm

Ø in mm	Approx. weight in kg/m
10/6	0.11
12/6	0.20
14/6	0.30
16/6	0.40
16/10	0.31
20/6	0.75
20/10	0.63
20/15	0.41
26/16	0.91
30/20	1.10
33/20	1.40
45/38	1.60
50/20	4.45
55/18	5.47
65/15	7.79
70/20	8.80

▶ **PTFE pipes, pressed**
virgin
in lengths of 300 mm

for your required finished size on request

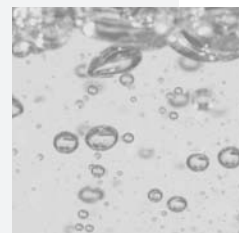
▶ Additional details can be found on the Internet at:

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Tolerances according to GKV Standards. The above formats are standard formats. Special dimensions/special lengths or cut-lengths are available on request.

**POLYTETRAFLON®
SHEETS AND FOILS MADE
FROM VIRGIN PTFE**



▶ **PTFE sheets**
virgin

Thickness in mm	Approx. weight in kg/sheet Format 600 x 600 mm	Approx. weight in kg/sheet Format 1.200 x 1.200 mm
1.0	1.00	3.50
1.5	1.40	5.40
2.0	1.90	7.20
2.5	2.40	9.00
3.0	2.80	10.80
4.0	3.70	14.20
5.0	4.60	17.70
6.0	5.40	20.60
8.0	7.10	27.50
10.0	8.90	34.40
12.0	10.70	41.30
15.0	13.30	51.60
20.0	17.60	67.90
25.0	22.00	84.90
30.0	26.30	101.90
40.0	35.10	135.90
50.0	43.80	169.90

▶ **PTFE foil**
virgin

Dimensions in mm	Approx. weight in kg/m
1,200 x 0.05	0.15
1,200 x 0.10	0.28
1,200 x 0.20	0.57
1,200 x 0.25	0.72
1,200 x 0.40	1.12
1,200 x 0.50	1.39
1,200 x 1.00	2.77
1,200 x 1.50	4.20
1,200 x 2.00	5.70
1,200 x 3.00	8.60

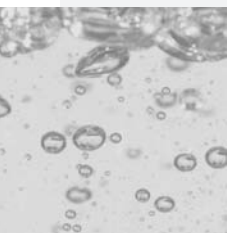
▶ **PTFE foil**
Type SKAP, self-adhesive on one side
adhesive acts as a mounting aid

Dimensions in mm
1,000 x 0.13
1,000 x 0.25
1,000 x 0.50

▶ **PTFE foil**
virgin, etched on one side
(pre-treated for bonding)

Dimensions in mm	Approx. weight in kg/m
1,200 x 0.25	0.72
1,200 x 0.50	1.39
1,200 x 1.00	2.77
1,200 x 2.00	5.77

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**POLYTETRAFLON®
SEMI-FINISHED
PRODUCTS
MADE FROM PVDF**



▶ **PVDF rods**
in lengths of 1,000 mm

Ø in mm	Approx. weight in kg/m
10	0.15
15	0.34
20	0.59
25	0.91
30	1.30
40	2.31
50	3.61
60	5.17
80	9.22
90	11.67
100	14.42
120	20.86
140	28.33
165	39.36
180	46.85
200	57.84

▶ **PVDF sheets**
2,000 x 1,000 mm

Thickness in mm	Approx. weight in kg/unit
1.0	3.56
1.5	5.34
2.0	7.12
3.0	10.68
4.0	14.24
5.0	17.80
6.0	21.36
8.0	28.48
10.0	35.60
12.0	46.10

▶ **PVDF welding wire**

Ø 3.0 mm	Coils of 1 kg
Ø 4.0 mm	Coils of 1 kg

▶ **PVDF blocks**
1,000 x 500 mm

Thickness in mm	Approx. weight in kg/unit
15.0	14.15
20.0	18.60
30.0	27.50
40.0	36.95

Properties overview

PVDF

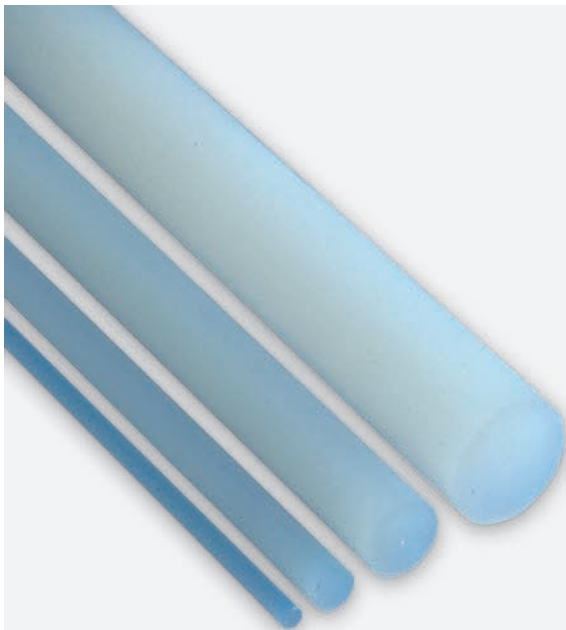
- Low density compared to other fluoroplastics
- Good mechanical strength
- High continuous service temperature
- Virtually no water absorption
- Good dimensional stability
- High chemical resistance
- Weather and radiation resistant
- Physiologically harmless
- High abrasion resistance

▶ Additional details can be found on the Internet at:

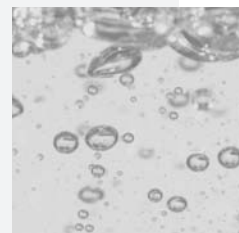
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**POLYTETRAFLON®
SEMI-FINISHED
PRODUCTS MADE FROM
PCTFE - PFA - FEP**



Properties overview

PCTFE

- Very wide temperature operation range, even at extremely low temperatures of about -255°C to +150°C
- Non-flammable
- Remarkable chemical resistance
- Excellent resistance to aging
- Impermeability to water and water vapour

PFA

- Weldability
- Wide temperature operation range from -200°C to +260°C
- Excellent chemical resistance
- Extremely high resistance to weather and UV stability
- Good non-stick properties
- Good sliding behaviour

FEP

- Low permeability of gases and chemicals
- Operating temperature of approximately -190°C to +200°C
- High impact strength at low temperatures
- Virtually no water absorption
- Good anti-adhesive properties
- Low friction coefficient
- Good abrasion resistance especially compared to other thermoplastics in the range above 150°C
- Excellent dielectric properties

▶ **PCTFE rods**

Ø in mm	Length in mm
7	400
8	400
10	400
13	400
14	400
15	400
16	400
17	400
18	400
20	400
22	400
25	400
30	400
35	400
40	400
45	400
50	400
55	400
60	400
65	100
70	100
75	100
80	50
100	50

▶ **FEP rods**

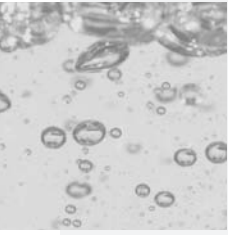
Ø in mm	Length in mm	Ø in mm	Length in mm
10	400	10	400
15	400	15	400
22	400	22	400
30	400	30	400

▶ **PFA rods**

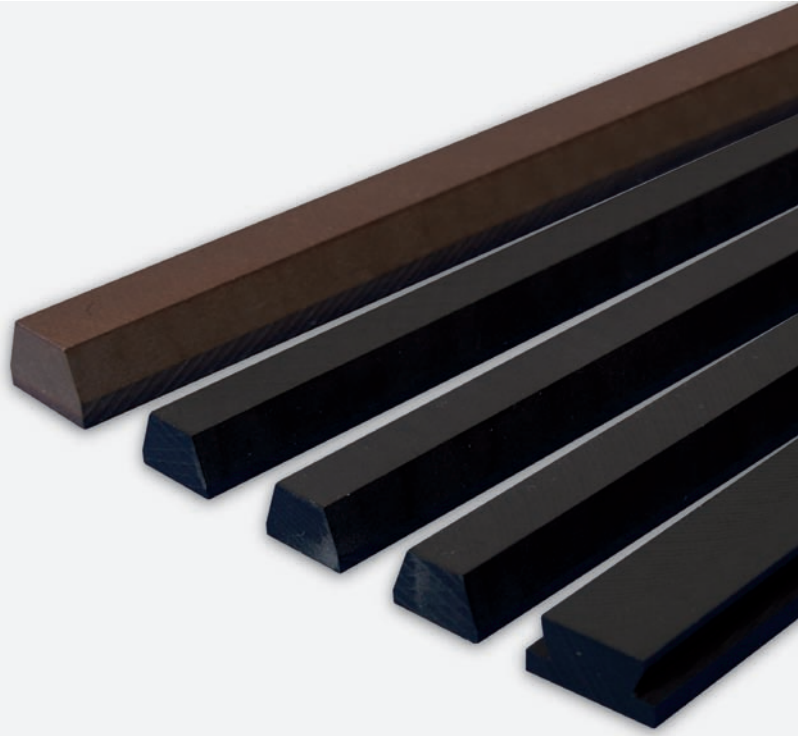
▶ **PCTFE / PFA / FEP sheets**

Thickness in mm	Dimensions in mm
3	300 x 300
5	300 x 300
8	300 x 300
10	300 x 300
12	300 x 300
15	300 x 300
18	300 x 300
20	300 x 300
22	300 x 300
25	300 x 300
28	300 x 300
30	300 x 300
32	300 x 300
35	300 x 300
38	300 x 300
40	300 x 300

Tolerances according to GKV Standards. The above formats are standard formats. Special dimensions/special lengths or cut-lengths are available on request.



PTFE COMPOUNDS



The properties of virgin PTFE can be changed by a controlled addition of fillers so that the field of application expands and the properties of materials can be optimised. Contact us regarding your specific application.

The admixture of fillers can be made for the following reasons:

- The wearability is increased multiple times
- The resistance to creeping or deformation under loads is increased several times
- The thermal conductivity may increase
- The thermal expansion is reduced

Tests under as real operating conditions as possible are highly recommended for critical applications. Contact our technical Sales department for a consultation.

Overview of standard compounds:

▶ PTFE	+25% glass
	+25% carbon
	+15% graphite
	+40% bronze
	+60% bronze

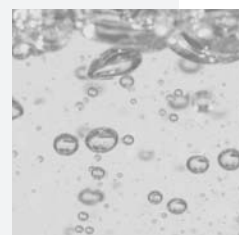
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RULON® THE SLIP RING MATERIAL



A PTFE compound with outstanding properties is on the market under the name Rulon®. After over 50 years of development, more than 20 different Rulon® types are now available.

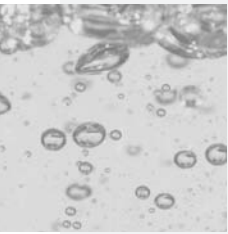
Rulon® is the material that deals systematically with the tribology of friction, abrasion and wear on friction surfaces acting on each other.

Ask for Rulon®, when

- a bearing lubrication is not desired or impossible
- high temperatures up to 280°C and low temperatures up to -240°C occur and the use of oil is not practical
- the electrical and insulating properties are important or
- the use of other plain bearings - metal or plastic - is problematic

Please note that the Rulon® semi-finished product are not in-store items.

Rulon® is a registered trademark of Saint Gobain Performance Plastics.



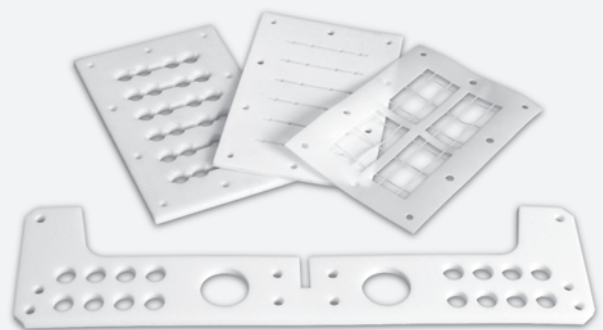
**POLYTETRAFLON®
FINISHED PARTS
ACCORDING TO DRAWING
AND SAMPLE**



We are able to produce technically sophisticated finished parts according to drawings or samples with the help of our own design office and well equipped production line.

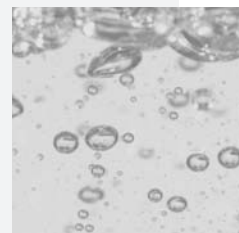
We offer the following machining processes:

- CNC - machining on modern machining centres
- Milling
- Drilling
- Grinding
- Turning (conventional and automatic)
- Sawing
- Stamping
- Water jet cutting
- Thermoforming
- Welding, including PTFE



Examples of design-specific finished parts

**POLYTETRAFLON®
PTFE BELLOWS**



Polytetraflon® PTFE bellows are expansion bellows, which make movements possible, do not pass on vibrations or compensate axis and angular offset. In order to achieve an optimum service life, we exclusively use PTFE or TFM specialty materials, which are characterised by high bending fatigue strength and a low pore content. We can undertake large scale as well as single part production.

Polytetraflon® bellows of **series 100** are made from homogeneous PTFE semi-finished products without cutting by acute plunge cut. This manufacturing process allows the greatest elasticity of all bellows relative to the installed length.

Polytetraflon® bellows of **series 200** are manufactured by machining process and have a higher compressive strength. The bellows receive the necessary flexibility and a good longitudinal expansion reserve by round turning. This form is specifically suitable for long-term use.

Please mention to us in your request the exact operating conditions such as stroke, pressure, temperature, etc. Please ask for our questionnaire or fill it out online at: www.polytetra.com

Polytetraflon® bellows are not stocked goods. Our bellows are always tailored to customer specifications.



**DO YOU WANT TO PRETREAT
PTFE FOR BONDING?
REQUEST OUR
SPECIAL BROCHURE!**

**ADDITIONAL CATALOGUES ON HEAT-
SHRINKABLE TUBING / ROLL COVERS:**



POLYTETRA GmbH • Hocksteiner Weg 40 • D-41189 Mönchengladbach
Telephone: + 49 (0)2166 / 95 90 - 0 • Fax: + 49 (0)2166 / 95 90 - 55
E-Mail: info@polytetra.com • Internet: www.polytetra.com

POLYTETRA

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